

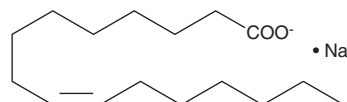
# PRODUCT INFORMATION



## Palmitoleic Acid (sodium salt)

Item No. 21911

**CAS Registry No.:** 6610-24-8  
**Formal Name:** 9Z-hexadecenoic acid, monosodium salt  
**Synonyms:** C16:1(9Z), C16:1 n-7, FA 16:1, (9Z)-Hexadecenoic Acid, cis-Palmitoleic Acid  
**MF:**  $C_{16}H_{29}O_2 \cdot Na$   
**FW:** 276.4  
**Purity:**  $\geq 95\%$   
**Supplied as:** A crystalline solid  
**Storage:**  $-20^{\circ}C$   
**Stability:**  $\geq 4$  years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Palmitoleic acid (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the palmitoleic acid (sodium salt) in the solvent of choice, which should be purged with an inert gas. Palmitoleic acid (sodium salt) is soluble in the organic solvent ethanol at a concentration of approximately 1.5 mg/ml.

Palmitoleic acid (sodium salt) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, palmitoleic acid (sodium salt) should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Palmitoleic acid (sodium salt) has a solubility of approximately 0.5 mg/ml in a 1:5 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Palmitoleic acid is an  $\omega$ -7 monounsaturated fatty acid that has been found in macadamia and sea buckthorn oils.<sup>1,2</sup> It increases basal and insulin-stimulated glucose uptake and glucose transporter 4 (Glut4) protein levels in 3T3-L1 adipocytes when used at a concentration of 200  $\mu M$ .<sup>3</sup> *Ex vivo*, palmitoleic acid (300 mg/kg per day) increases glucose uptake and aerobic and anaerobic glycolysis and reduces *de novo* fatty acid synthesis and activity of the lipogenic enzymes ATP citrate lyase (ACL) and glucose-6-phosphate dehydrogenase (G6PDH) in isolated murine adipocytes. Dietary administration of palmitoleic acid (300 mg/kg) reduces high-fat diet-induced insulin resistance and liver inflammation in mice.<sup>4</sup>

### References

1. Yang, B. and Kallio, H.P. Fatty acid composition of lipids in sea buckthorn (*Hippophaë rhamnoides* L.) berries of different origins. *J. Agric. Food Chem.* **49**(4), 1939-1947 (2001).
2. Fard, A.M., Turner, A.G., and Willett, G.D. High-resolution electrospray-ionization fourier-transform ion cyclotron resonance and gas chromatography-mass spectrometry of macadamia nut oil. *Aus. J. Chem.* **56**(5), 499-508 (2003).
3. Bolsoni-Lopes, A., Festuccia, W.T., Chimin, P., *et al.* Palmitoleic acid (n-7) increases white adipocytes GLUT4 content and glucose uptake in association with AMPK activation. *Lipids Health Dis.* **13**(199), 1-10 (2014).
4. Souza, C.O., Teixeira, A.A.S., Lima, E.A., *et al.* Palmitoleic acid (N-7) attenuates the immunometabolic disturbances caused by a high-fat diet independently of PPAR $\alpha$ . *Mediators Inflamm.* 582197 (2014).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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